1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The *National Environmental Policy Act of 1969* (NEPA) requires Federal agency officials to consider the environmental consequences of their proposed actions before decisions are made. In complying with NEPA, the United States (U.S.) Department of Energy (DOE), National Nuclear Security Administration (NNSA[1]) follows the Council on Environmental Quality regulations (40 *Code of Federal Regulations* [CFR] 1500-1508) and DOE's own NEPA implementing procedures (10 CFR 1021). The purpose of an environmental assessment (EA) is to provide Federal decision-makers with sufficient evidence and analysis to determine whether to prepare an Environmental impact statement (EIS) or issue a Finding of No Significant Impact. This EA has been prepared to assess environmental consequences resulting from the construction and operation of a Biosafety Level 3 (BSL-3) laboratory[2] facility within the boundaries of the Los Alamos National Laboratory (LANL) (Figure 1-1). LANL is one of the national security laboratories under the authority of the Under Secretary for Nuclear Security of the NNSA who serves as the Administrator for Nuclear Security and Head of the NNSA (50 USC Chapter 41, § 2402(b)).

The objectives of this EA are to (1) describe the underlying purpose and need for NNSA action; (2) describe the Proposed Action and identify and describe any reasonable alternatives that satisfy the purpose and need for NNSA action; (3) describe baseline environmental conditions at LANL; (4) analyze the potential indirect, direct, and cumulative effects to the existing environment from implementation of the Proposed Action and other reasonable alternatives; and (5) compare the effects of the Proposed Action with the No Action Alternative and other reasonable alternatives. For the purposes of compliance with NEPA, reasonable alternatives are identified as being those that meet NNSA's purpose and need for action by virtue of timeliness, appropriate technology, and applicability to LANL .

The EA process also provides NNSA with environmental information that can be used in developing mitigative actions, if necessary, to minimize or avoid adverse effects to the quality of the human environment and natural ecosystems should NNSA decide to proceed with implementing the construction and operation of a BSL-3 facility at LANL. Ultimately, the goal of NEPA and this EA is to aid NNSA officials in making decisions based on an understanding of environmental consequences and taking actions that protect, restore, and enhance the environment.

[1] The NNSA is a separately organized agency within DOE established by Congress in 2000 under Title 50 United States Code Chapter 41, Subchapter I, Section 2401.

[2] A biosafety level or BSL is assigned to an agent based upon the activities typically associated with the growth and manipulation of the quantities and concentrations of infectious agents required to accomplish identification or typing as determined by the Centers for Disease Control (CDC) and National Institutes of Health (NIH). Additional information about the various BSL assignments is provided in later sections and within Appendix A of this EA.

1.2 BACKGROUND

LANL covers an area of 43 mi^2 (111 km^2) in north-central New Mexico in a region characterized by forested areas with mountains, canyons, and valleys, as well as diverse cultures and ecosystems (Figure 1-1). LANL was originally established in 1943 as "Project Y" of the Manhattan Project with a single-focused national defense mission – to build the world's first nuclear weapon. After World War II ended, the Project Y Facility was designated a permanent research and development laboratory (known first as the Los Alamos Scientific Laboratory, it acquired the LANL name in the 1980s) and its mission was expanded from defense and related research and development to incorporate a wide variety of new mission assignments in support of Federal Government programs. The Federal Government Agency, with administrative responsibility for LANL, has evolved from the post-World War II Atomic Energy Commission to the Energy Research and Development Administration, and finally to the DOE, NNSA. The University of California (UC at LANL) is the current LANL Management and Operating Contractor and has served in this capacity since the facility's inception.

Current NNSA mission-support work provided by UC at LANL stems from its predecessor agency's original mission to build the world's first nuclear weapon. The work includes research and development work performed for a variety of programs within the NNSA, as well as cost-reimbursable work that is identified as "work for others." This designation, "work for others," encompasses non-DOE sponsored work performed in support of other Federal agencies, universities, institutions, and commercial firms, which is compatible with the NNSA mission work conducted at LANL and which cannot reasonably be performed by the private sector. Within DOE, the NNSA mission is "(1) To enhance United States national security through the military application of nuclear energy; (2) To maintain and enhance the safety, reliability, and performance of the United States nuclear weapons stockpile, including the ability to design, produce, and test, in order to meet national security requirements; (3) To provide the United States Navy with safe, militarily effective nuclear propulsion plants and to ensure the safe and reliable operation of those plants; (4) To promote international nuclear safety and nonproliferation; (5) To reduce global danger from weapons of mass destruction; and (6) To support United States leadership in science and technology" (50 USC Chapter 41, § 2401(b)). Work conducted at LANL provides support to these NNSA missions, with a special focus on national security.

The DOE Chemical and Biological National Security Program (CBNP) was initiated in FY1997 to engage the DOE and its laboratories more fully in the development and demonstration of new technologies and systems to improve U.S. domestic preparedness and response capabilities to chemical and biological attacks. The CBNP is a needs-driven program focused on addressing the highest priority area to counter chemical and biological threats. The CBNP was established in response to the *Defense Against Weapons of Mass Destruction Act* passed by Congress in 1996 (50 USC § 2301).

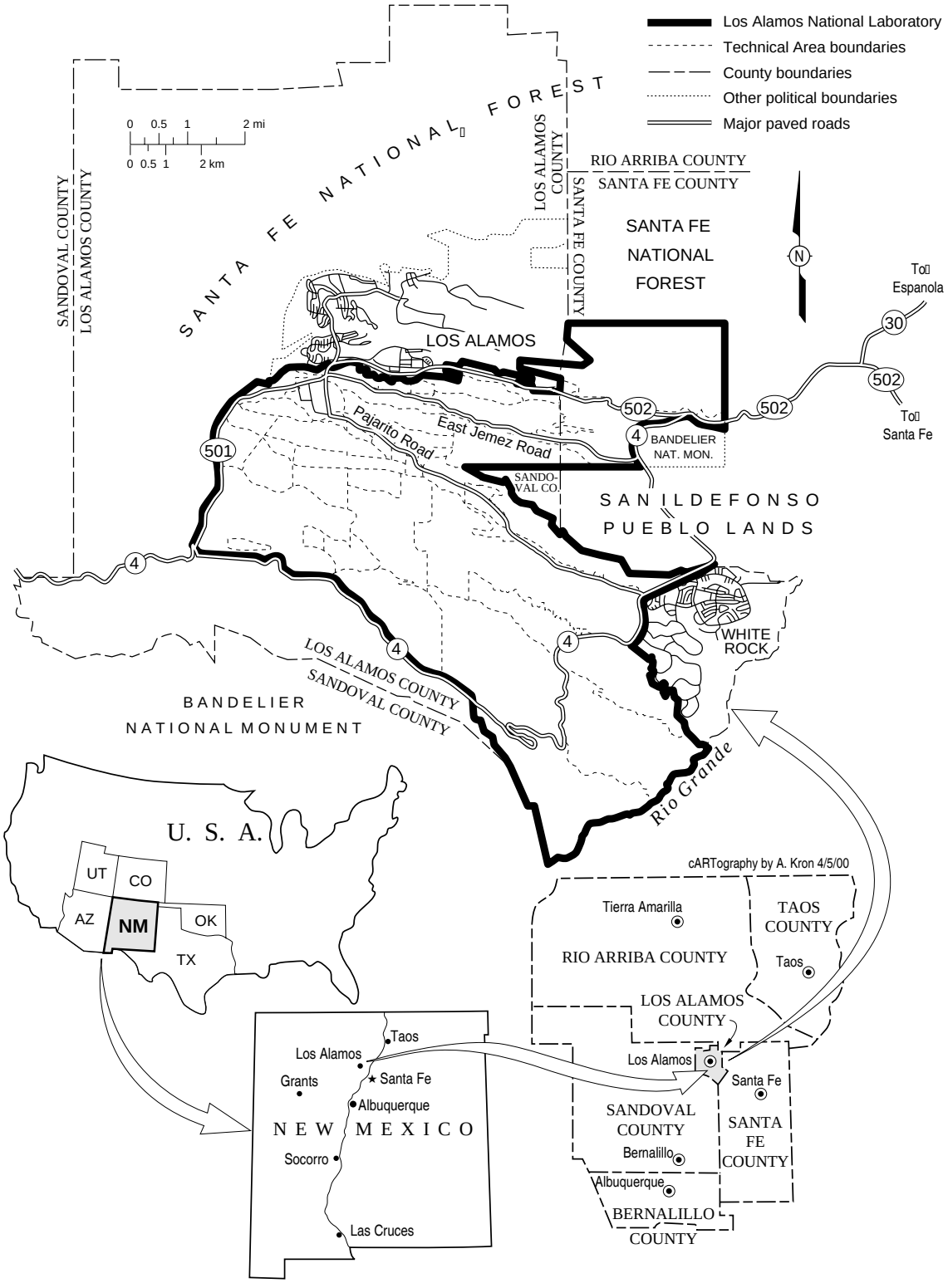

Figure 1-1. Location of Los Alamos National Laboratory (LANL)

DOE and the national security laboratories have a long history of supporting nonproliferation and national security policy. As part of its primary nuclear science and technology mission, DOE has developed extensive capabilities in chemistry, biology, materials and engineering science, and systems engineering at these laboratories. These capabilities, in areas such as genomic sequencing, development of new deoxyribonucleic acid (DNA[3])-based diagnostics, advanced modeling and simulation, and microfabrication technologies, as well as the nexus of these capabilities with expertise in nonproliferation and national security, form the basis of NNSA's role in combating the chemical and biological threat. In addition to the chemical and biological nonproliferation activities supported by this program, the national security laboratories conduct work in chemical and biological defense research for other government agencies.

The existing facilities and areas of expertise at LANL have evolved since its inception in the early 1940s. About 1,850 buildings and a variety of other structures have been constructed within LANL and are now operated in support of NNSA's diverse missions. About 12,000 employees occupy these buildings and structures (both UC at LANL and various sub-contractors to UC). Buildings and facilities are concentrated in the general vicinity of Technical Area (TA)-3 together with about one-half of the site employees. However, there are 46 additional TA's within LANL boundaries (Figure 1-2) where the remainder of UC at LANL and most of the sub-contract employees are located. Until the establishment of NNSA, UC developed facilities and expertise at LANL under direction of DOE to perform theoretical research, including analysis, mathematical modeling, and high-performance computing; experimental science and engineering ranging from bench-scale to multi-site, multi-technology facilities (including accelerators and radiographic facilities); and advanced and nuclear materials research, development, and applications, including weapons components testing, fabrication, stockpile assurance, replacement, surveillance, and maintenance (including theoretical and experimental activities). These capabilities now allow UC at LANL to conduct research and development activities for NNSA such as high explosives processing, chemical research, nuclear physics research, materials science research, systems analysis and engineering, human genome "mapping," biotechnology applications, and remote sensing technologies applied to resource exploration and environmental surveillance. Additional information regarding the DOE and NNSA work assignments at LANL is presented in the *LANL Site-wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory* (SWEIS) (DOE/EIS-0238) (DOE 1999a). This document and other related documents can be found in the DOE Reading Rooms in Albuquerque, New Mexico (at the Government Information Department, Zimmerman Library, University of New Mexico), and in Los Alamos (at the Community Relations Office located at 1619 Central Avenue).

NNSA has the responsibility for national programs to reduce and counter threats from weapons of mass destruction (nuclear, biological, and chemical weapons). Activities

[3] DNA is a polymeric chromosomal constituent of living cell nuclei that determines individual hereditary characteristics.

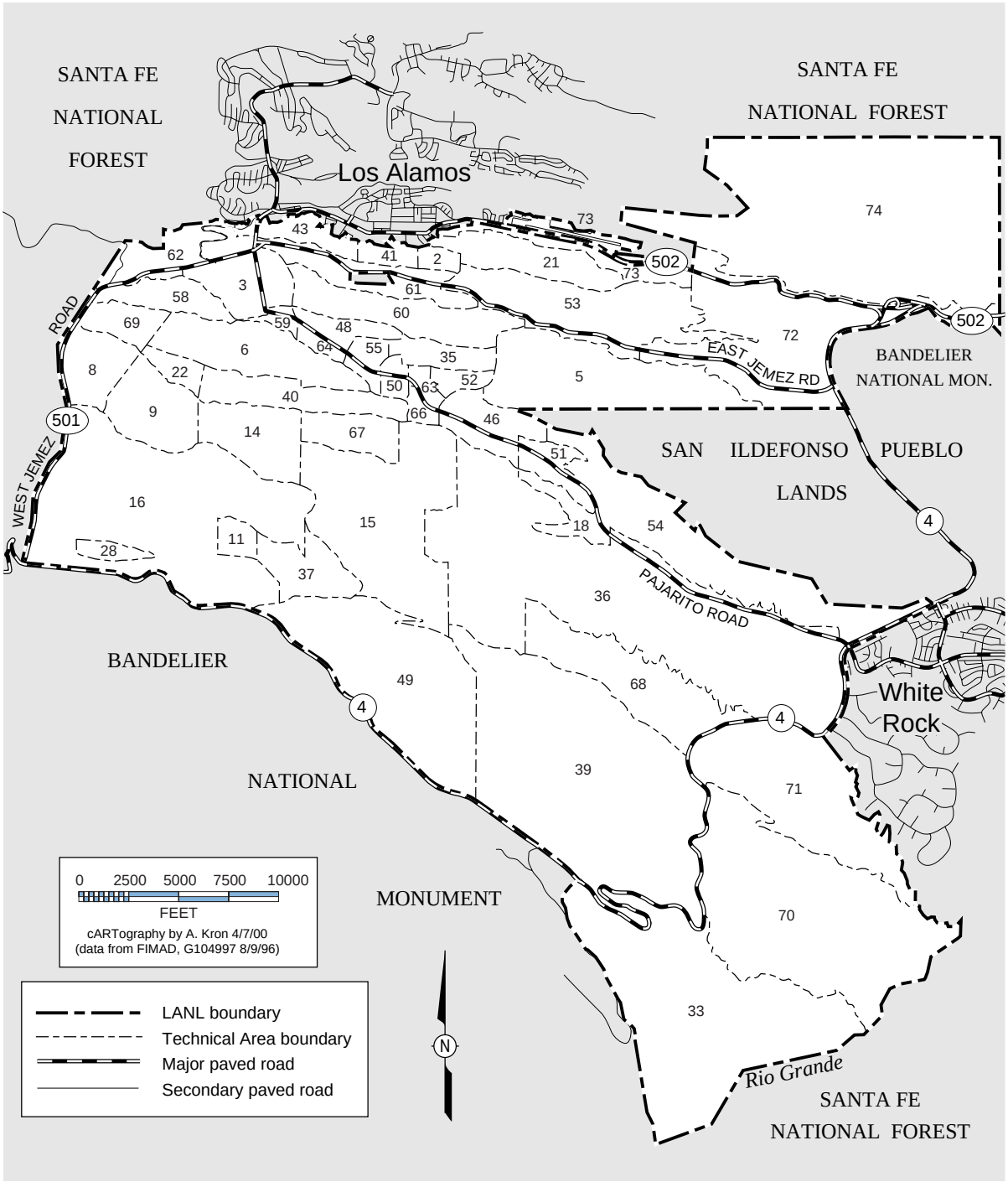

Figure 1-2. Los Alamos National Laboratory Technical Areas

conducted in this area include assisting with control of nuclear materials in states of the former Soviet Union, developing technologies for verification of the Comprehensive Test Ban Treaty (September 1996), countering nuclear smuggling, safeguarding nuclear materials and weapons, and countering threats involving chemical and biological agents.

UC at LANL has been assigned research and development activities in support of these NNSA responsibilities. UC at LANL employees have, among other work performed at LANL, provided much of the technology and expertise needed to verify treaties and implement various safeguards to ensure compliance with terms and conditions of treaties and agreements; undertaken satellite and remote sensing research to provide the technology to detect clandestine nuclear tests and other indicators of weapons proliferation; begun research aimed at countering nuclear smuggling and proliferation of chemical and biological weapons; assisted in the establishment, training and technology development for NNSA Nuclear Emergency Search Team and Accident Response Group, which provide vital emergency response capabilities; and performed studies of the human genome sequence and the structure of other biomolecules. Current research and technology development work conducted by UC at LANL targets both the reduction of the national threat from terrorism using biological weapons and enhances the Nation's public health capabilities. This work is focused on the development of scientific tools to identify and understand the pathogens of medical, environmental, and forensic importance. UC staff at LANL have performed mission-support work and also compatible work for others that has included analysis of DNA extracted from pathogens or from environmental, medical, or forensic samples suspected of containing pathogens or their non-viable remnants. This work was performed, in part, for the National Institutes of Health (NIH) to investigate biological processes and genetic material related to disease-causing organisms. Early detection and identification of organisms would greatly benefit the Nation's public health response. The capabilities for bioscience work at LANL benefits DOE and NNSA programs as well as collaborative efforts with academic institutions, other Federal agencies, and international peace-keeping missions through the State Department and the United Nations. Future work under the NNSA promises to expand opportunities to develop scientific tools addressing national health security issues and global concerns for emerging diseases.

The Bioscience Division has been assigned the UC at LANL responsibility for conducting work related to biological science research including work with national health security issues and emerging diseases. Work is conducted at five LANL locations but primarily within the Health Research Laboratory (HRL), which is located within LANL's TA-43, immediately adjacent to the Los Alamos Medical Center within the Los Alamos townsite. Research performed at this site includes structural, molecular, and cellular radiobiology, biophysics, biochemistry, and genetics research. The HRL was identified as one of LANL's "key facilities" as listed and defined in the 1999 SWEIS (DOE 1999a). Additional information about that facility and work performed therein, together with their environmental impacts, is presented in the LANL SWEIS analysis (DOE 1999a).

The HRL houses multipurpose laboratories, including BSL-1 and BSL-2 laboratories, in which a variety of molecular and cellular research is performed. LANL work in the biosciences arena is conducted according to the accepted national standards for biosafety work that have been developed by the U.S. Department of Health and Human Services, Public Health Service, through their subsidiary organizations, the CDC and the NIH. Details regarding BSLs and specific information and requirements for work in microbiological laboratories is provided in Appendix A of this EA. In addition, all experiments involving biological agents[4] are reviewed and must be approved prior to their commencement by the Institutional Biosafety Committee (IBC), which is made up of UC at LANL staff members, UC and community health care providers, an NNSA Federal member, and at least two members of the public. The IBC conducts periodic and at least annual research project review meetings that are open to the public. In general, BSL-2 facilities are used for working with a broad spectrum of biological agents (or bioagents) or biological toxins[5] commonly present in the community and may be associated with human disease of moderate severity. Examples include Hepatitis B virus, measles, and salmonellae. Limited access, separated from public areas with posted BSL-2 biohazard signs, waste decontamination facilities, together with standard and special microbiological practices, is required for these laboratories. Common examples of BSL-2 facilities are those located in hospitals, medical schools, veterinary schools, biology research institutions, and dental offices.

The importance of work performed for NNSA in bioscience research and development in support of their national security nonproliferation of weapons of mass destruction mission is increasing. The NNSA CBNP mission is to "develop, demonstrate, and deliver technologies and systems to improve domestic defense capabilities and, ultimately, to save lives in the event of a chemical or biological attack." The threat presented by terrorists and rogue nations to the American people and our allies, including military personnel, amplifies the need for threat reduction research. Current work at LANL in bioscience research is limited to BSL-2. Work in support of the DOE and NNSA national security missions requires specialized facilities to safely and securely handle and store infectious organisms beyond that which can be provided by BSL-2. At this time, DOE does not have under its administrative control within the DOE complex any microbiological laboratory facility capability beyond BSL-2.

In February 2001, the DOE Office of Inspector General, issued an audit report (*Report on Department of Energy Activities Involving Biological Select Agents*, DOE/IG-0492, included in this EA as Appendix B). This Report stated audit findings and listed recommendations to DOE for corrective actions as follows:

"RECOMMENDATIONS: We recommend that the Under Secretary for Energy, Science, and Environment and the Under Secretary for Nuclear Security jointly:

[4] Biological agents or bioagents are organisms or the product of organisms that present a health risk to humans. These can be bacterial, fungal, parasitic, rickettsial, or viral agents, or prions.

[5] Biological toxins are toxic chemicals of biologic origin and are not self-replicating.

1. Identify the types and locations of activities being conducted by the Department involving biological select agents and select agent materials.
2. Initiate action to ensure: (a) appropriate Federal oversight; (b) consistency in policy; and (c) standardization of implementing procedures for biological select agent activities being conducted by the Department. Actions, for example, could include encouraging more interagency cooperation in this area and, similar to the approach taken by the U.S. Army, supplementing CDC guidance regarding activities involving biological select agents and select agent materials to address situations unique to DOE.
3. Ensure that required NEPA reviews are conducted prior to the start of biological select agent and select agent material activities and revised, as needed, when significant changes occur in the activities.
4. Initiate appropriate action to ensure the Department's laboratories, including those managed by the NNSA, receive timely and consistent information regarding current CDC guidance.

We also recommend that the General Counsel:

5. Determine the potential liability to the Department if contractor employees working with biological select agents refuse immunizations or if they do not sign a statement acknowledging the risks associated with the project, the availability of immunizations, and the individual's decision not to be immunized.
6. Determine the feasibility of requiring Department laboratory employees to be immunized in order to work with infectious agents.
7. Determine whether the Department has liability to third parties (e.g., spouses, families, members of the community) who may be infected as a result of coming in contact with a laboratory employee who works with biological select agents, but has refused to be immunized.

MANAGEMENT COMMENTS: The Department generally concurred with our recommendations. In comments dated December 12, 2000, to the final draft of our report, the Acting Director of the Department's Chemical and Biological National Security Program stated that while there is no indication that biological safety has been compromised at any DOE facility, the draft report correctly points out operational concerns and inconsistencies that existed during the review. He provided the following examples of actions completed by the Department within the last year to improve biosafety practices at its laboratories and said that the Department is already taking steps consistent with our recommendations:

- A biosurety program was initiated on December 1, 1999, at Albuquerque to strengthen the safety and security protocols used with biological select agents.

- Communications has been improved between DOE headquarters, the Operations Offices, and Department's laboratories, as well as between DOE and other Federal agencies involved with biological research.
- CDC select agent registration requirements are being clarified.
- The former Secretary [of Energy] established a Biosurety Working Group led by EH to recommend specific improvements in directives and contract language and other actions which will improve oversight and implementation of safe practices in potentially hazardous areas of biological research."

The audit report concluded with the following statement:

"INSPECTOR COMMENTS: We believe the corrective actions identified by the Department are responsive to our recommendations."

In a memorandum for the Secretary of Energy transmitting the report, the Inspector General stated:

"While we consider these findings to be serious, we found no evidence that current activities had adversely impacted the safety and health of the public or of the Department's Federal or contractor workforce.

Further, during the course of our review the Department took certain actions to improve biosafety practices at its laboratories. For example, the Department of Energy Biosurety Working Group, which was chartered on September 29, 2000, is considering revisions to current policies and procedures governing potentially hazardous biological materials and select agents. Also, a biosurety program was initiated at Albuquerque to strengthen local safety and security protocols. In addition, CDC biological select agent registration requirements are being clarified, and communications concerning biological research activities have reportedly improved among Department Headquarters, the Operations Offices, the laboratories, and other Federal agencies. While these are positive steps, the potential risks associated with the use of biological select agents warrant continued senior management attention."

DOE is continuing its efforts to improve and provide oversight to biosurety work conducted at facilities within the DOE complex. The Office of General Council is reviewing the Office of Inspector General's recommendations.

Facilities using CDC and NIH standards have demonstrated safe and secure working conditions with infectious agents. According to these standards for BSL-2 (CDC 1999) laboratories, the primary hazards to personnel working with agents at this level relate to accidental exposures through skin punctures or contact with mucous membranes, or ingestion. The organisms routinely manipulated at BSL-2 are not known to be transmissible, person-to-person by the airborne pathway. According to their standard for BSL-3 (CDC

1999), the primary hazards to personnel working with agents at this level relate to accidental injections, ingestion, and exposure through airborne pathway. In BSL-3, more emphasis is placed on primary and secondary barriers to protect personnel in contiguous areas, the community, and the environment from exposure to potentially infectious aerosols. There are currently over 200 BSL-3 laboratory facilities in the United States at various non-DOE sites. BSL-3 laboratory facilities are specifically designed and engineered for work with bioagents with the potential for aerosol transmission that may cause serious or potentially lethal disease by inhalation if left untreated (such as the bacteria responsible for causing tuberculosis in humans). Examples of common BSL-3 facilities include hospital surgical suites, clinical, diagnostic, and teaching laboratories associated with medical or veterinary schools and pharmaceutical production laboratories. Requirements of operating a BSL-3 facility (CDC 1999) are detailed in Appendix A.

In the past, and currently, BSL-3 sample preparation work for DOE and NNSA research projects at LANL has been contracted to universities or private sector laboratories because of the lack of this capability within DOE. In the private sector, projects requiring higher BSLs are on the rise resulting in these laboratories being unable to accept as much outside work. Security is also an issue since some information associated with samples must have a very high degree of physical security not available through the use of contractor facilities. Lastly, sample procurement quality assurance has been problematic in the past for UC at LANL. The documentation of sample history from collection, to analysis, to the result is extremely important to the quality of the data. This chain-of-custody is key to the technology being utilized and is essential to verifying the data and interpreting the results. It is critical to understand that the quality and security of samples could in some instances be crucial to national security and therefore, sample quality cannot be left in question.

To further enhance the Nation's ability to detect and isolate microorganisms and treat victims of bioterrorism, additional NNSA work is required. Existing LANL bioscience facilities, infrastructure and personnel are sufficient to complete only a portion of the work. The capabilities existing onsite within LANL include describing and investigating genomes to complete strain identification and determine the source or geographic origins. Strain identification of microorganisms, including specific individual mutations, can be used to explain their ability to infect and cause disease. Experiments with genetic "finger-printing" require frequent routine laboratory interactions by researchers to facilitate gathering data and advancing the technology.

1.3 PURPOSE AND NEED FOR AGENCY ACTION

DOE conducts bioscience work at LANL in support of its national security and science missions and in support of CBNP. The NNSA CBNP mission is to "develop, demonstrate and deliver technologies and systems to improve domestic defense capabilities and, ultimately, to save lives in the event of a chemical or biological attack." This mission requires work with infectious agents, including those historically used for bioweapons. LANL's capabilities, in areas such as genomic sequencing, development of new DNA-based

diagnostics, advanced modeling and simulation, and microfabrication technologies, as well as the nexus of these capabilities with expertise in nonproliferation and national security, contribute to NNSA's role in combating the chemical and biological threat. Combining LANL's pioneering technologies and capabilities, current biological science work with engineering, computational, and physics capabilities, presents an opportunity for DOE to carry research and understanding of this field farther than before. The expertise, technology, and current capabilities at LANL have been recognized by national leaders involved in planning and addressing the increasing national security concerns that focus on bioagent counter-terrorism technologies, and the countering of emerging natural diseases. As a result, the need to work with level 3 bioagents at LANL and within NNSA is growing.

The nature of BSL-3 work requires efficient sample processing, handling of a variety of organisms concurrently, and assurance of sample security and integrity. NNSA's mission requirements for sample integrity necessitates that the chances of cross-contamination and degradation of samples are minimized by reducing excessive handling and transportation. The few off-site BSL-3 facilities available to NNSA are often heavily committed to other projects or tailored to work with specific types of microorganisms. Additionally, use of off-site BSL-3 facilities increases the risk of cross-contamination due to additional handling and transportation. A BSL-3 facility provides for safe and secure manipulation and storage of infectious microorganisms. In order to more effectively utilize and capitalize on existing onsite facilities and capabilities at LANL and to ensure the quality, integrity and security of microbiological work, NNSA needs BSL-3 laboratory capability within the boundaries of the national lab.

1.4 SCOPE OF THIS EA

A sliding-scale approach (DOE 1993) is the basis for the analysis of potential environmental and socioeconomic effects in this EA. That is, certain aspects of the Proposed Action have a greater potential for creating environmental effects than others; therefore, they are discussed in greater detail in this EA than those aspects of the action that have little potential for effect. For example, implementation of the Proposed Action would affect socioeconomic resources in the LANL area. This EA presents in-depth descriptive information on these resources to the fullest extent necessary for effects analysis. On the other hand, implementation of the Proposed Action would cause only a minor effect on waste disposal at LANL. Thus, a minimal description of waste disposal effects is presented.

When details about a Proposed Action are incomplete, as a few are for the Proposed Action evaluated in this EA (for example, the exact location of the facility within the identified TAs), a bounding analysis is often used to assess potential effects. When this approach is used, reasonable maximum assumptions are made regarding potential emissions, effluents, waste streams, and project activities (see Sections 2.0 and 4.0 of this EA). Such an analysis usually provides an overestimation of potential effects. In addition, any proposed future action(s) that exceed(s) the assumptions (the bounds of this effects analysis) would not be

allowed until an additional NEPA review could be performed. A decision to proceed with the action(s) or not would then be made.

1.5 PUBLIC INVOLVEMENT

NNSA provided written notification of its intention to prepare this NEPA analysis to the State of New Mexico, the four Accord Pueblos (San Ildefonso, Santa Clara, Jemez, and Cochiti), the Pueblo of Acoma, the Mescalero Apache Tribe, and to over 30 stakeholders in the area on February 5, 2001. This notification included information regarding a poster session held on February 22, 2001 at the Los Alamos Area Office to provide the opportunity for attendees to make scoping comments on this EA. Notification of the public poster session was also published in the local newspapers: the *Santa Fe New Mexican*, the *Los Alamos Monitor*, and the *Rio Grande Sun* before the meeting date. Additionally, notice of the public poster session was posted on LANL's electronic Newsbulletin. NNSA offered to provide separate project briefings to the four Accord Pueblos and the State of New Mexico as well.

Upon release of the Predecisional Draft EA on October 30, 2001, NNSA allowed for a 21-day comment period. Copies of the predecisional draft EA were sent to the State of New Mexico, the four Accord Pueblos, the Pueblo of Acoma, the Mescalero Apache Tribe, and other entities previously identified as desirous of receiving copies of the EA. Notification of the availability of the EA was made as well to stakeholders and members of the public previously identified as wishing to receive such notification, and notice was also published in the three local newspaper identified above. Another public discussion session was held to provide an opportunity for attendees to make comments on this Predecisonal Draft EA. The date (November 14, 2001) and time of this session were announced a week in advance of the session in the local newspapers listed above, as well as on the LANL Newsbulletin. Due to NNSA's inability to schedule all requested project briefings before the end of the original 21-day time period, NNSA extended the comment period for an additional 30-day period extending from December 17, 2001 through January 15, 2002. This additional review period was again advertised in the three local newspapers identified above and individual notification letters were mailed to all parties previously receiving notification of the availability of the draft document or copies of the document. Where appropriate and to the extent practical, concerns and comments received by the close of the comment period were considered in the Final EA. Additionally, NNSA has provided responses to public concerns that are presented in the next subsection of this EA.

1.6 COMMENT SUMMARIES AND DOE RESPONSES

The full text of the comments received by NNSA on the predecisional draft EA by stakeholders and members of the public are presented in Appendix C of this EA. Several topics raised by public comments were of broad interest or concern. These topics were categorized as general issues and represent broad concerns directly related to the environmental effects associated with implementing the Proposed Action analyzed in the EA.

Many commentors also raised topics that are not pertinent to the environmental review; however, for clarification, the NNSA addressed them to the extent practicable. Specific comments and concerns voiced by commentors were addressed through changes made to the document text to the extent practicable. Changes to the text are side-barred. General issues include the following topics:

- NEPA Compliance Issues
- LANL Safety/Security Concerns
- Anti-NNSA Mission Sentiment and Fear of Future Bioweapons Work/International Treaties Concerns
- Inspector General Report
- Terrorist Risk
- Institutional Biosafety Committee (IBC) Role
- Seismic Issues
- Transportation Issues

1.6.1 NEPA Compliance Issues

Several commentors were of the opinion that the analysis of the proposed BSL-3 facility does not support a FONSI. Other commentors stated that because the proposed action is one without precedent, a draft FONSI should be made available for public review for 30 days before the FONSI is issued in accordance with DOE's NEPA Implementing Regulations. Additionally, several commentors stated that because the proposed action is one without precedent at a nuclear facility that preparation of an EIS was needed. Commentors were of the opinion that the CDC must approve of the procedures used in NNSA biological research activities and, therefore, the DOE should designate the CDC as a cooperating agency in the preparation of the EA. Commentors believe that since the proposed BSL-3 facility proposal was not included in the SWEIS that a full EIS is needed complete with public hearings. Some commentors expressed the opinion that a Supplement to the 1999 LANL SWIES is needed. Commentors were of the opinion that they did not have an adequate time period in which to review the draft EA and that the comment period should be extended from 21 days to 120 days. Commentors also expressed the opinion that the comment period wasn't adequately publicized and public weren't notified of the availability of the draft document. Commentors stated that some advocacy groups did not receive copies of the EA although they had provided scoping comments to the NNSA. Commentors stated that they had not received all the information on existing LANL BSL-1 and -2 facilities previously requested and that EA reference documents have not been made readily available to the public. Commentors were of the opinion that, as biologically-related work for the NNSA "chemical and biological nation security program" is slated to take place at several locations within the DOE/NNSA complex, a programmatic EIS is required that would include a facility specific analysis for the proposed LANL BSL-3 facility.

Response: DOE believes that the analysis of environmental effects adequately supports a FONSI. After taking a hard look at the environmental consequences that could result from implementing the proposed BSL-3 facility project, NNSA has concluded that the proposed action is not a major federal action that significantly effects the environment. The EA analysis considered affects relating to human health, ecological resources, transportation, waste management, utilities and infrastructure, noise, socioeconomics, geology, soils, seismicity, visual resources, and air quality. Affects to these resource areas were minor in nature. Human health affects are expected to be no different from other U.S. CDC-registered laboratories operated according to CDC and NIH guidelines, which experience infrequent worker accidents with minor or no consequences to workers and members of the public. Ecological resources, transportation, waste management, utilities and infrastructure, noise, socioeconomics, geology, soils, seismicity, visual resources, air quality, cultural resources, environmental justice, environmental restoration, floodplains and wetlands, land use or water resources were identified as being unaffected by the construction and operation of the BSL-3 Facility; or as having potential slight affects that would be inherently mitigated by the project design; or as having minor effects that were mostly temporary and intermittent in nature. Because these affects are not significant in terms of context and intensity, the NNSA has concluded that the potential project effects warrant the issuance of a FONSI.

Between 250 and 300 BSL-3 facilities have been constructed and are in operation within the U.S. The proposed construction and operation of a BSL-3 facility at LANL is, therefore, not a newly invented action that is without precedent. The DOE's NEPA Implementing Regulations (10 CFR 1021.322 (d) and the Council on Environmental Quality's (CEQ) NEPA Implementing Regulations (40 CFR 1500.2 (d)) provisions regarding making a FONSI available for public review, which includes actions for which there is no precedent, are not applicable in this instance. The CEQ regulation in question does not refer to an individual agency's wealth of experience with regard to undertaking a proposed action but, rather, to whether the proposed action is one that has previously been conducted before.

There is no CEQ or DOE regulatory requirement that links the precedent of an action with a requirement to prepare an EIS. This is equally true for the siting of a proposed project at a particular geographic location where one has not previously been located, or for the co-location of a proposed project with any other activity or operation when the projects has not previously been sited nearby to such functions. The fact that there has never been a BSL-3 facility sited and operated at any DOE facility, nor one that was sited and operated at a research facility that stores and handles radioactive materials such as LANL, does not automatically require NNSA's preparation of an EIS for the proposed BSL-3 facility project.

The Council on Environmental Quality's NEPA Implementing Regulations state, with regard to cooperating agencies (40 CFR 1501.6): "Upon request of the lead agency, any other Federal agency which has jurisdiction by law shall be a cooperating agency. In addition any other Federal agency which has special expertise with respect to any environmental issue, which should be addressed in the statement may be a cooperating agency upon request of the lead agency". CEQ regulations do not explicitly discuss cooperating agencies in the context

of EAs. DOE and NNSA carefully considers extending the invitation for neighboring agencies and government entities to act as cooperating agencies on the preparation of NEPA documents for actions that involve its facilities. The NNSA Office of Los Alamos Site Operations (formerly the Los Alamos Area Office) in particular has a well established history of working with other local, state, federal, pueblo and tribal governmental agencies and entities in the preparation of its NEPA documents, including EAs. No fiscal reimbursement is made to cooperating agencies for their participation a cooperating agency and, as a result, these agencies and entities frequently must curtail or limit their involvement in other agency's NEPA analyses. When internal or local subject matter experts are available to NNSA, NNSA may chose to exercise its discretion with regard to requesting the involvement of a Federal agency in its NEPA process when a Federal agency does not have a local presence. The CDC certainly has expertise with regard to work performed in BSL-3 facilities and the attendant environmental issues associated with their operation. The CDC does not, per se, have jurisdiction by law over the NNSA with regard to their required approval of procedures used in NNSA biological research activities and does not have a local presence with regard to LANL. CDC staff members across the country were contacted during the preparation of the EA and these staff members provided information and data to NNSA representatives that were used in the EA analysis. The CDC will review detailed plans for the facility and will review the facility itself after it is constructed and before it operates. Additionally, the DoD has experience in operating BSL-3 facilities and DoD staff were similarly contacted and provided information, data, and reference material for NNSA's use in preparing the EA as well. Neither of these entities, however, has knowledgeable staff stationed in Los Alamos or close by. As a practical consideration neither of these two entities were invited to participate as cooperating agencies in the preparation of the EA.

The 1999 SWEIS included those actions that were ripe for decision and discussed those actions that were being contemplated at the time by DOE at LANL. Subsequent proposed actions require individual NEPA compliance. DOE and NNSA has prepared several environmental assessments and environmental impact statements that pertain to LANL since the issuance of the Final LANL SWEIS and its Record of Decision (ROD). The fact that the proposed actions, including the proposed BSL-3 facility, were not included in the SWEIS analysis is not itself a reason for the preparation of an EIS for these actions rather than an EA. Neither CEQ nor DOE NEPA Implementing Regulations automatically require this level of NEPA analysis. Therefore, DOE and NNSA must determine the level of NEPA analysis that is appropriate for each new proposed action. While each subsequent NEPA analysis for proposed LANL actions may tier from the 1999 SWEIS (that is, the analysis of a more narrow scope may tier from an analysis of a broader scope (40 CFR 1502.20)), a Supplement SWEIS is not required in this instance. A Supplement SWEIS for a proposed action(s) would be required only if the action would likely result in a substantial change(s) in the operation of LANL at the enhanced level chosen in the ROD such that it would be relevant to environmental concerns; or, if there were significant new circumstances or information relevant to environmental concerns and bearing on the enhanced level of operation of LANL or its impacts. The EA's analysis of the environmental effects likely

from the implementation of the proposal to construct and operate a BSL-3 facility do not support the need for a Supplement to the SWEIS based on these two criteria.

The predecisional draft EA for the proposed BSL-3 facility was issued for stakeholder review and comment and was made available to the public for a 21-day period beginning on October 30, 2001. This review period is within the designated time period (namely, 14 to 30 days) for state and tribal review of draft EAs promulgated in DOE's NEPA Implementing Regulations (10 CFR 1021.301(d)). After receiving an additional request for a tribal briefing that could not be accommodated within the original 21-day review period, DOE decided to reissue the predecisional draft EA for an additional 30-day period beginning on December 17, 2001. In both instances LANL stakeholders and members of the public were informed of the review period through notification letters sent to: previously identified points of contact with the State of New Mexico; the Governors and other governmental staff of local pueblos and tribes; additional local government and tribal representatives; and to previously identified interested members of the public. Paid advertisements were placed in three local newspapers, and electronic notification was placed on the LANL electronic bulletin board. Distribution of hard copies of the EA was made to all government, pueblo, and tribal representatives and to members of the public based upon their previous requests. Hard copies of the document were later distributed upon written or verbal requests. NNSA regrets that some parties did not believe that they could adequately review the document within the original 21-day review period. However, NNSA is of the opinion that the document was adequately written in plain language and that a four month (120 day) review period is excessive for a document of less than 100 hundred pages in length. The distribution of the EA to the State's designated Points of Contact and to their staff members has been deemed adequate by the State for several years (the Points of Contact have their agency's responsibility for distributing it internally according to their own management requirements). Similarly, the pueblos and tribal Governors and their representatives determine the distribution and number of copies of NEPA documents that they wish to receive and have the responsibility of distributing it internally as they deem appropriate. Members of the public that have identified to NNSA that they wish to receive copies of all NEPA documents prepared by NNSA that involve LANL operations, or for a special project, are sent copies of the document. Members of the public that have indicated that they wish to receive notification of the availability of such documents are not sent copies of the documents. Address forms were made available for attendees at the February 2001 scoping meeting held for the proposed BSL-3 facility EA on which attendees could designate whether they wished to receive copies of this EA or other NEPA documents. In an effort to conserve paper and postage expenses, hard copies of NEPA documents are not routinely supplied to scoping commentors or other members of the public unless they request the documents. The NNSA regrets any inconvenience of any group or individual that this cost saving measure might cause.

Some commentors stated that they had not received documents previously requested regarding existing LANL biosafety facilities. These requests were made of the University of California (LANL's management and operations contractor). The NNSA regrets any

inconvenience to the requester that may have resulted from the failure of the University of California to provide the requested information. The NNSA has taken action to respond to the request for information. Additionally, a copy of the information requested, specifically, a copy of the Hazard Control Plan for the BSL-2 facilities at LANL, has been added to this EA in Appendix D. Hazard Control Plans are "living documents"; they are subject to ongoing review and changed as needed and minimally are reviewed annually. Therefore, this hazard control plan should be taken only as generally illustrative of such plans.

At the time of the issuance of the predecisional draft EA on October 30, 2001 for state and tribal review and comment, all EA document references were available either in hard copy upon request, or electronically via the World Wide Web. At some point between October 30th and November 13th, some of the documents became inaccessible electronically. Many Federal agencies and other organizations, including the DOE/NNSA, have been reviewing information available on their websites because of the recent national security threats and either have restricted access to certain documents or removed them entirely from their websites. When this accessibility problem was brought to NNSA's attention, hard copies of the EA reference documents that are not readily available already at the LANL library and the DOE reading room were placed in the Los Alamos DOE Reading Room. Hard copies of the reference documents were also hand-delivered to the group requesting them. DOE/NNSA regrets any inconvenience this may have caused members of the public living distant from Los Alamos that depend on electronic accessibility of documents for easy document access. Currently, DOE/NNSA is restricting public access to its electronic documents that contain detailed site maps and certain other detailed information and it is unknown how long this restriction measure may be in effect. As policies are developed regarding electronic accessibility of documents and the appropriateness of their contents given the changed world security situation, NNSA hopes to better accommodate its offsite stakeholders and members of the public with enhanced electronic document access capability.

When considering the issue of preparing a programmatic NEPA analysis, a Federal agency must determine whether the program in question meets the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1508.18 (b) (3)) (3) definition of a major federal action, which includes the: "Adoption of programs, such as a group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive." These regulations also address when an agency must prepare a programmatic analysis, including the analysis of cumulative effects. A programmatic analysis is necessary where the proposals for federal action "are related to each other closely enough to be, in effect, a single course of action". Additionally, the CEQ regulation's speak to the scope of NEPA EISs (40 CFR 1502.5(a)(1)) and to connected actions as those that "automatically trigger other actions which may require EISs"; "cannot or will not proceed unless other actions are taken previously or simultaneously"; and "are interdependent parts of a larger action and depend on the larger action for their jurisdiction". DOE and NNSA conduct biological research at various facilities across the DOE complex of national security

laboratories and other research institutions. This research began in the late 1940s when the DOE's predecessor agency recognized the need for obtaining information about the effects of radiation on humans and other biota. As an outgrowth of this research, many studies and research projects have been conducted over the years both for the benefit of the DOE (and its predecessor agencies) and as "work-for-others" projects with sponsors from the private sector and other Federal agencies. Each of DOE's facilities has developed specialized areas of focus and expertise and on some occasions have contributed their expertise to performing portions of work that has been pulled together to answer complex questions or reach complex goals, such as the work performed recently to map the human genome. At this time, the NNSA believes that these research efforts consist of projects too diverse and discrete to constitute either a "major Federal action" or activities sufficiently "systematic and connected" so as to require a programmatic NEPA analysis, especially an EIS. Not only are the research projects diverse, they are discrete and independent in nature. They are separately operated. Approval of one project does not insure the approval of other similar projects. Success in one project area does not invariably affect the variety or direction of NNSA's research, inasmuch as NNSA's research program is largely reactive, designed to respond to the needs of NNSA, DOE and other user groups and consumers. While DOE responded to the1996 Congressional passage of the Defense Against Weapons of Mass Destruction Act, which authorized the DOE to establish a Chemical and Biological Weapons Nonproliferation Program, its research has continued to build upon existing research expertise present at its various research institutes. DOE and NNSA have not expanded their research such that their projects are concerted or systematic and connected. Mere commonality of objectives is insufficient under the Council on Environmental Quality's NEPA Implementing Regulations to constitute a "major Federal action" requiring NEPA compliance in the form of a programmatic NEPA analysis. While NNSA's biological research projects all pertain to biota and are ultimately directed toward the support of NNSA's national security mission, these rudimentary similarities are not sufficient to bind the universe of research projects conducted by DOE and NNSA into a "program" as this is identified by the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1508.18(b)(3)). NNSA is therefore of the opinion that no programmatic NEPA analysis is necessary at this time for biological research conducted at its facilities and this EA is sufficient to met NNSA's NEPA compliance requirements with regard to the construction and operation of the proposed BSL-3 facility at LANL.

1.6.2 LANL Safety/Security Concerns

Commentors expressed the general opinion that LANL operators have a long history of mistakes, accidents and safety violations. Commentors were also of the opinion that LANL's record of protecting the environment and providing security for its activities doesn't warrant their trust. Commentors also expressed the opinion that LANL already oversees and undertakes more operations than it can safety and responsibly handle. Commentors believed that having increased numbers of shipments of microorganisms and related materials as part of the proposed action, and the dangerous nature of the microorganisms to be handled at the BSL-3 facility, would create increased LANL security concerns and accidental release risks

to public health and the environment. Commentors stated that independent competent personnel should perform periodic and no-notice facility inspections. Commentors also stated that the CDC should be doing BSL-3 work rather than placing such work at LANL under the control of the DOE.

Response: The University of California has operated LANL since the inception of the Manhattan Project, conducting experiments and research projects, both during World War II and thereafter. The work at LANL has occasionally resulted in serious mistakes being made, in the occurrence of accidents and even the death of LANL workers. Additionally, construction workers have been seriously injured at LANL over the 58 years of operation. These are irrefutable facts. LANL, and all DOE facilities currently operate according to Integrated Safety Management (ISM) principals. While mistakes and accidents will inevitably continue to occur, NNSA's goal is for the University of California to significantly decrease the occurrence of such events and to minimize their severity at LANL. To this end, very punitive contractual penalties have been instituted in the management and operations contract for LANL between the DOE and the University of California. NNSA regrets that members of the public do not trust the ability of the University of California to adequately perform their moral and contractual obligations. The University of California is tasked with conducting important research and development – research and development that frequently pushes at and steps beyond the present envelope of science. NNSA is confident that LANL can be operated safely and securely no matter the level of overall operations. The proposed increase in shipments of microliter and milliliter quantity samples (one milliliter is about equal to a teaspoon in quantity), which could include live cells of microorganisms suspended in a semi-solid agar culture media or frozen solid in culture media, and the overall operation of the proposed BSL-3 facility at LANL using select agents would not be likely to result in an increase in human health risks to the public or the environment. The EA analysis for the proposed BSL-3 facility does not support this concern; the accident analysis scenario presented in the EA addresses the potential effects associated with an accident in which potentially highly infectious cells would be disbursed into the environment from the proposed facility during its operation. The safe operation of nearly 300 BSL-3 facilities within the U.S., including a university research BSL-3 facility located in the middle of Albuquerque, NM, substantiates the analysis presented in this EA with regards to this issue. Representatives of the CDC periodically inspect all BSL-3 facilities. If constructed, representatives would also inspect the LANL BSL-3 facility, as would representatives of the NNSA. The CDC, which is an arm of the Department of Health and Human Services, is one of the work-for-others customers of LANL's biological research program. Other users of LANL's expertise in this area of research include the DoD, the Federal Bureau of Investigation (FBI), law enforcement agencies, fire departments, public health officials, universities, and research organizations.

The CDC provides guidelines for the operation of BSL-3 facilities, reviews building plans and the constructed building before operations begin, and then periodically inspects these facilities when they are operating, as an organization it actively operates very few laboratories. The laboratories the CDC operates perform work that is different from the

research work performed at LANL. Therefore, the CDC contracts with DOE and NNSA facilities, as well as with other government and private facilities, to perform much of its needed research work rather than duplicating these organizations research expertise within the Department of Health and Human Services. While some commentors would prefer to see BSL-3 work performed only by the CDC, this is neither cost effective or practical in today's world of shrinking budgets funded by Congress.

1.6.3 Anti-NNSA Mission Sentiment and Fear of Future Bioweapons Work/ International Treaties Concerns

Commentors expressed a general opposition to nuclear weapons and to performing biological work at LANL. Commentors also stated their opinion that neither a DOE or DoD facility should have a BSL facility. Commentors questioned whether work in a BSL-3 facility was the right role/mission for LANL and whether a nuclear facility was the right place for this type of work. Commentors expressed their fear with regard to the recent Presidential decision to pull out of the Biological and Toxins Weapons Convention Treaty discussions as the U.S. leadership has admitted to having conducted secret projects simulating offensive bioweapons efforts. Commentors were of the opinion that this BSL-3 facility adds to the perception that the U.S. intends to prepare bioweapons for offensive capability. One commentor stated that this type of facility adds to the fear of escalating bioweapons research with no end in sight. Commentors expressed their concern that siting at a weapons facility is indicative of the facility being a defacto bioweapons facility for weapons research. One commentor opined that an open and honest environmental assessment could not be made due to the security requirements for such a facility.

Response: NNSA acknowledges that many people are opposed to research, development and testing of nuclear weapons and weapons research and testing using live microorganisms. Congress directs DOE and NNSA with regards to their missions and work performed at their facilities must support the Congressionally mandated missions. Similarly, the DoD must respond to its Congressionally assigned missions. Departmental mission support activities have necessitated biological research projects in the past and this requirement will likely continue into the future for elements of both departments.

As stated earlier, LANL's Bioscience Division's biological work is performed partially to support DOE and NNSA mission requirements. This work has evolved over the years to meet the needs of DOE and NNSA, and DOE's predecessor agencies, as well as the needs of other customers under the "work-for-others" program conducted at LANL. The biosciences area of expertise at LANL is constantly being refined and honed. As described in the 1999 LANL SWEIS, LANL has a long-standing, existing bioscience capability and performs cellular biological research work (SWEIS, Chapter 2.2.2.12). Operation of the BSL-3 facility would not constitute a new role for LANL, nor would the operation of such a facility be inconsistent with existing DOE mission work evaluated in the LANL SWEIS Expanded Operations Alternative selected by DOE in the associated ROD. Having this type of expertise at a nuclear facility has, in the past, been readily demonstrated to benefit from its

synergic location with nuclear studies of non-biologic natures. NNSA and DOE believe that the mission support work conducted at LANL will benefit from the implementation of the proposed construction and operation of a BSL-3 facility at LANL and that LANL is, therefore, exactly the right place for this type of facility.

The NNSA acknowledges public concern over the recent Presidential decisions with regard to continuing to engage in negotiations of the international Biological and Toxins Weapons Convention Treaty. Certain individuals might see the proposed BSL-3 facility as adding to the perception that the U.S. plans to prepare bioweapons for offensive capability. However, the U.S. is a signatory to the Biological and Toxins Weapons Convention Treaty and has agreed that actual development and production of bioweapons will not be performed by this nation. Nonetheless, if this were the case and the U.S. were indeed planning a major departure in its offensive capabilities policy, such work would require a facility with a different functional capability and of a larger size than the proposed BSL-3 facility. The microbiological research sample preparation equipment being proposed for the LANL BSL-3 laboratory would not be the correct type of equipment needed to support a bioweapons production facility. Unlike the proposed BSL-3 facility at LANL, which would be constructed with about 800 square feet of BSL-3 laboratory space divided between two separate rooms, a facility capable of supporting a full blown national bioweapons offensive capability would require a sizeable amount of floor space. The expanded floor space would be needed to accommodate a sizable worker staff and multiple pieces of specialized equipment. Public fear of escalating U.S. bioweapons development research and LANL's contribution to this work, should NNSA implement the proposed BSL-3 facility at LANL, is unfounded – but no less real. Individuals with that viewpoint should seek remedy through their Congressional representatives to effect National policy decisions.

1.6.4 Inspector General (IG) Report

Commentors remarked that the IG Report regarding biological work at DOE/NNSA facilities warrants a pause in placing a BSL-3 facility at a DOE site. Commentors also expressed their opinion that the EA does not address the issues raised by the IG Report and these should be analyzed.

Response: The IG report cited by the commentors (DOE/IG-0492 dated February 2001, which appears in its entirety as Appendix B of this EA), states at the beginning of its Observations and Conclusions section: "We found no evidence that the Department's current biological select agent activities have adversely impacted the safety and health of DOE and contractor employees or the public". The IG observed that the Department had not developed and implemented policies and procedures that establish clear roles and responsibilities for the conduct of activities involving biological select agents and select agent materials. Additionally, the IG stated their opinion that the Department had not ensured that DOE laboratories, including those managed by the NNSA, follow "best practices" for the operation of these facilities. The concluding section of the IG Report, "Inspector Comments" section, contains the statement: " We believe the corrective actions

identified by the Department are responsive to our recommendations". By the date of issuance of the IG report in February 2001, the DOE had already corrected identified problems associated with its management of facilities at which biological select agent work was conducted.

As described in the draft EA, the IBC would have authority over approving projects conducted at the proposed BSL-3 facility. NNSA would also maintain strict adherence to the CDC and NIH guidelines for operating a facility of this nature. These actions would continue to be responsive to the recommendations made by the IG report.

1.6.5 Terrorist Attack Risk

Commentors stated their opinion that analyzing only maximally credible events and reasonably credible events in the EA with regard to accidents seemed inappropriate given the events of September 11, 2001 and the recent anthrax scare. Commentors were of the opinion that a credible terrorist risk analysis should be included in the EA. One commentor stated their opinion that, as LANL already presents more than few potential terrorist targets, having a BSL-3 facility at LANL could increase the appeal for attacking the site to would-be terrorists.

Response: The events of September 11, 2001 and the subsequent mailing of anthrax-containing letters have made it abundantly clear that America is vulnerable to terrorist attacks. An instinctive reaction to this would be to include analysis within future NEPA documents in anticipation of terrorist actions being taken. However, there are at least two reasons as to why terrorist attacks are not currently included in NEPA analysis, nor are they anticipated for inclusion in these analytical documents in the near future. The first reason is that accident risk analysis is performed for reasonably foreseeable events. While terrorist attacks are possible, these are not reasonably foreseeable events. There is not enough historical data to extrapolate conclusions about either the probability of possible future attacks occurring at any given locale within the United States, or about the probability of any particular type of attack mode. Nonetheless, regardless of the initiating event (whether naturally occurring or human-made through error or evil intent), the NEPA accident analysis scenario presented in this EA in which cells are disbursed into the environment from the proposed facility is bounding in effect and subsequent projected human health risk for operating the facility.

Furthermore, terrorist attacks come under the realm of security and therefore are appropriately evaluated in a vulnerability assessment. A vulnerability assessment will determine what, if any, security weaknesses exist for this proposed action and will dictate what steps should be taken to minimize the identified security weaknesses. This assessment document and its details are not available for public review since this would then defeat the purpose of performing a vulnerability assessment by making all security measures public knowledge. Terrorists could then use this information to plan their attacks – something that no one wishes to facilitate.

LANL, along with many other cities and industrial sites within the country, has several facilities that might attract the attention of potential terrorists. LANL is not believed to be particularly vulnerable to such attack, nor is believed to be particularly likely as one of the nation's most appealing targets for such activity. The remote location of LANL and its relative inaccessibility, two of the reasons the site was chosen 58 years ago, continue to contribute to its protection. Security at LANL in the wake of the September 11th events continues to be maintained at a heightened state and this will continue to be the case for as long as it is determined to be necessary, possibly well into the future.

1.6.6 Institutional Biosafety Committee (IBC) Role

Commentors expressed their opinion that, as the IBC meetings are held annually and are open to the public, project information could be withheld from the IBC due to security and classification issues. Commentors stated their opinion that some projects may bypass appropriate scrutiny and checks. Other commentors remarked that the IBC Charter must be fully complied with by LANL.

Response: IBC meetings are held periodically to review proposed research projects and a yearly review meeting is also conducted. The public is invited to attend the annual meetings, as they are not held as closed sessions. Project information subject to DOE security and classification restrictions is withheld from IBC members that are without appropriate security clearances, and is also withheld from IBC members with appropriate security clearances that have no need for the knowledge. Holding a DOE security clearance does not automatically give the clearance holder access to all restricted information. It is usually possible to give enough information about potential biosciences projects, as is true of proposed projects with regards to NEPA compliance, for the reviewer to understand the proposal sufficiently for the purposes of evaluating it without the need for divulging classified data. Where this is not possible, special arrangements are made by which appropriately cleared members of the IBC can review the information while maintaining the appropriate security of the information. If review and approval of the project by members of the IBC in some fashion is not possible, the project cannot be performed at LANL. All proposed microbiological research projects at LANL, even projects with classified portions, must undergo review and approval first by the LANL IBC with no exceptions. DOE and NNSA agree with the commentors that the IBC Charter must be fully complied with at LANL.

1.6.7 Seismic Issues

Commentors stated their opinion regarding the incompleteness of the draft EA because the document does not include a risk analysis of Rendija Canyon Fault activity within the range of less than 6 on the Richter scale. Commentors also cited the lack of a complete seismic activity and ground motion analysis as a flaw of the draft EA, as well as the lack of volcanic activity consideration. Commentors also stated that prefabricated buildings are not

earthquake proof, nor is their use consistent with the LANL Comprehensive *Site Plan for 2001 planning principles.*

Response: The draft EA states that the proposed facility, built as a permanent structure, would be built to meet or exceed the design requirements described in the LANL Facility Engineering Manual. These meet and exceed the Zone 2b Seismic code requirements denoted in the Uniform Building Code (UBC). Additionally, the facility would be designed to meet the requirements of a Performance Category 2 facility at LANL. There is no strict correlation between a structure being built to a certain UBC zone number with the degree and type of damage it would sustain in an earthquake of a particular magnitude. However, permanent structures built according to these stated requirements (taking into account local unknown factors such as proximity to epicenter and underlying soil and stratigraphy types) are designed to withstand a seismic event that has a recurrence event of once in every 1,000 years. For LANL, a once in every 1,000-year event would be roughly equivalent to a 5 on the Richter scale. A 6 on the Richter scale equates roughly to about a once in every 2,000-year event. As the chance for a seismic event moves from once in every 1,000 to once in every 2,000 years, the likelihood that the event will occur decreases. A Zone 2 structure is designed to also remain standing after a once in every 1,000- year event, but may have some noticeable damage. A building without windows may or may not have a breach in its outer walls after such an event – there are too many variables involved to be able to predict the potential extent of damages. The draft EA included an accident risk assessment based on an accident scenario by which microorganisms escaped from the facility. This means that the accident scenario bounds accidents of more possibly frequent occurrence but which could result in lesser environmental consequences, such as a minor earthquake that did not result in opening up a pathway for microorganisms to escape the confines of the building. An earthquake of a magnitude greater than 6 on the Richter scale would be expected to result in major damages to many of the buildings at LANL and would likely include fires either at the BSL-3 facility or nearby that could engulf the facility. Fire would be expected to kill any microorganisms in its path. An earthquake of this magnitude is by far not as likely an accident event initiator as human error. Therefore the human-error initiated event is bounding of that accident initiator as well.

Seismic studies of TA-3 cited as references in the EA include the proposed BSL-3 facility optional site locations. The analyses of the potential environmental effects associated with constructing the BSL-3 facility considered the currently available seismic activity and ground motion information regarding the Rendija Canyon Fault. None of the three optional sites would require that the BSL-3 facility structure be located over a fault line or within 50 feet of such an area feature. NNSA believes that the analysis is not flawed. The 1999 SWEIS analyzed naturally occurring accident event initiators including earthquake, fire, and volcanic action. This project specific facility analysis tiers from that larger scope analysis and it is not therefore necessary to repeat the presentation of analysis from that document in the EA. Prefabricated modular units, if used, would be required to be constructed to standards equal to those for a permanent on-site constructed facility, including earthquake and ground motion standards, which is stated in the EA. NNSA is pursuing the elimination

of most new construction using transportables or modular construction units at LANL as an outgrowth of several factors, including the loss of a number of these structures in the recent Cerro Grande Fire. The fact that the alternatives analyzed in the EA are not consistent with UC's LANL Comprehensive Site Plan for 2001 planning principles does not mean that NNSA could not, in this instance, pursue that course of action.

1.6.8 Transportation Issues

Commentors expressed their opinion that the increase in the volume of shipments of biological agents to and from LANL greatly increases the chances for shipping accidents. Commentors also expressed their opinion that the increase in shipments also increases the vulnerability of packages containing biological agents to terrorist seizure. One commentor remarked that the LANL, NNSA and DOE should extensively aid transportation agencies, such as the U.S. Postal Service, to develop their own safety and security measures. Another commentor expressed their opinion that the EA was incomplete because of the lack of complete analyses of transportation risk analysis for the different transportation routes both on-site and through neighboring communities. One commentor stated that transportation of either attenuated or live biological select agents through the U.S. Postal Service was unacceptable because of potential safety and terrorist risks and that NNSA must consider other transportation options such as secure federal couriers.

Response: The volume of shipments of microorganisms into the proposed BSL-3 facility would sharply increase when the facility first begins its operation then would taper off to levels that are only marginally higher than are experienced today in support of the existing LANL biosciences capabilities. Shipments out of the facility would also represent only a slight increase over today's levels of biological shipments. Both incoming and outgoing shipments are typically of milliliter or microliter size samples packaged inside several layers of containment per DOT shipping requirements. The packaged samples are shipped via the U.S. Postal Service and other commercial or private couriers and are tracked per DOT and CDC requirements. Any increase in incidence of shipping accidents due to the increased number of shipments to and from LANL as a result of implementing the proposed BSL-3 facility, would be undetectable given the volume of mail and packages transported by these services. Similarly, the any increase in vulnerability of packages containing biological agents to terrorist seizure would be undetectable given the volume of mail and packages transported by these services. Each organization or company has its own security measures as they recognize the need to safe guard the mail and packages for which they are responsible. When requested, the DOE and NNSA would be happy to share our knowledge and expertise regarding security issues with the shipping entities.

The EA analyzes the shipment of samples packaged in accordance with DOT standards. The packaging requirements required by DOT have already undergone extensive drop, crush and other accident condition testing, before the DOT determined what packaging was appropriate to assure safe transport of these types of samples. NEPA compliance for establishing the use of these packages is the responsibility of that agency. Using DOT standards for packaging

and using couriers that transport the shipments according to DOT requirements does not require duplicative NEPA compliance on the part of NNSA in this document. Transportation of microbiological samples to and from various points around the country and around the world, when performed according to DOT standards for packaging and shipment, should result in no human health or environmental effects to the carriers themselves or to the public along the routes. Secure federal couriers are not necessary to transport samples to and from the proposed facility. The U.S. Postal Service has been transporting appropriately packaged biological samples for many years both before, during and after the recent anthrax contaminated letters were mailed. Hospitals, laboratories, schools, universities and teaching facilities engage in the transport of biological samples every day in volume. Any increase in the risk of terrorist attack because of shipments associated with the proposed BSL-3 facility at LANL would be negligible.